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Personality and vocational motivation: A study among Catholic seminarians in Italy  
employing the Big Five and the NIRO

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**Abstract**

This paper tests the hypothesis that vocational motivation (as assessed by religious orientation theory) among Catholic seminarians is significantly correlated with their personality profile (as assessed by the Big Five Factor model). Data provided by 170 seminarians in Italy who completed the New Indices of Religious Orientation (NIRO) and the Big Five Questionnaire (BFQ) demonstrated that: the intrinsic orientation is high among seminarians and positively correlated with conscientiousness; the extrinsic motivation is low among seminarians and negatively correlated with emotional stability; and that the quest orientation is quite high among seminarians, positively correlated with openness and negatively correlated with conscientiousness and friendliness. Attention is given to the distinctive strengths and weaknesses of the quest orientation within the context of formation for priesthood.

*Keywords:* Catholic seminarians, personality, religious orientation

## Introduction

### Assessing personality

Personality psychology has over the years developed a number of different models of personality theory and assessment and several of these models have been employed among clergy. For example, the Sixteen Factor model of personality developed by Cattell, Cattell, and Cattell (1993) has been employed among clergy by Francis and Musson (1999), and Musson and Francis (2000, 2002). The Three Dimensional model of personality developed by Eysenck and Eysenck (1975) has been employed among clergy by Loudon and Francis (1999), Francis and Loudon (2001), and Robbins, Francis, Haley, and Kay (2001). The model of Psychological Type grounded in Jung (1971) and operationalised by the Myers Briggs Type Indicator (Myers & McCaulley, 1985) and the Francis Psychological Type Scales (Francis, 2005) has been employed among clergy by Francis, Robbins, and Wulff (2011), Francis and Village (2012), and Francis and Crea (2015). The Big Five Factor model of personality developed by Costa and McCrae (1985) has been employed among clergy by Kosek (2000), Galea (2010), Cerasa *et al* (2016), and Büssing, Baumann, Jacobs, and Frick (2017).

Following the advocacy of Piedmont (1999) the Big Five Factor model of personality has been of particular and growing interest within the psychology of religion. In Costa and McCrae's (1985) original formulation of the five factor model, the factors were characterised as extraversion, agreeableness, conscientiousness, neuroticism, and openness. The Italian adaptation of this model proposed by Caprara, Barbaranelli, Borgogni, and Perugini (1993) adopted somewhat different terminology and conceptualised the five factors somewhat differently. Since the present study is employing this Italian operationalisation of the Big Five Factor model through the Big Five Questionnaire (BFQ) close attention is given to this instrument.

In the BFQ, the first factor is defined as Energy in order to distance the construct from the emphasis on sociability often associated with extraversion. The Energy factor combines two facets described as dynamism (I am an active and vigorous person) and dominance (Generally I tend to assert myself rather than give in). The second factor, defined as Friendliness, combines two facets described as cooperativeness (If necessary I don't refrain from giving help to a stranger) and politeness (I hold that there is something good in everyone). The third factor, defined as Conscientiousness, combines two facets described as scrupulousness (I usually attend to the smallest details in everything) and perseverance (I always pursue the decisions I've made through to the end). The fourth factor, defined as Emotional Stability, combines two facets described as emotion control (I usually don't react in an exaggerated way even to strong emotions) and impulse control (Usually I don't lose my calm). The fifth factor, defined as Openness, combines two facets described as openness to culture (I'm always informed about what's happening in the world) and openness to experiences (I'm fascinated by novelties).

### **Assessing religious orientation**

Religious orientation theory has its roots in the work of Allport (1966) who was concerned to distinguish between two different motivations among those who practised their religion as churchgoers. According to Allport, some churchgoers were motivated by an intrinsic commitment to religious faith, while others were motivated by an extrinsic commitment whereby religion served other extrinsic ends. Allport and Ross (1967) operationalised these two dimensions of intrinsic and extrinsic orientation. The intrinsic measure contained nine items, the first two of which were: 'It is important for me to spend periods of time in private religious thought and meditation'; 'If not prevented by unavoidable circumstances, I attend church'. The extrinsic measure contained eleven items, the first two

of which were: 'Although I believe in my religion, I feel there are many more important things in my life'; 'It doesn't matter so much what I believe so long as I lead a moral life'.

Reflecting further on the nature of intrinsic religious orientations, Francis (2007) operationalised three components of this construct in creating the New Indices of Religious Orientation, styled integration (My religious beliefs really shape my whole approach to life), public religion (I allow almost nothing to prevent me from going to church on Sundays), and personal religion (I pray chiefly because it deepens my relationship with God). The New Indices of Religious Orientation also operationalised three components for extrinsic religious orientation, styled compartmentalisation (While I believe in my religion, there are more important things in my life), social support (I go to church because it helps me to feel at home in my neighbourhood), and personal support (One reason for me praying is that it helps me to gain relief and protection).

Critiquing Allport's model of religious orientation, Batson (1976) and Batson and Ventis (1982) argued the case for a third dimension alongside the intrinsic and extrinsic orientations, which they styled the quest orientation. The quest orientation gave recognition to a form of religiosity which embraces characteristics of complexity, doubt, tentativeness, and honesty in facing existential questions. Batson and Ventis (1982, p. 145) also provided a six-item instrument to measure the quest orientation. Two items were: 'It might be said that I value my religious doubts and uncertainties'; 'Questions are far more central to my religious experience than are answers'. Subsequently Batson and Schoenrade (1991a, 1991b) developed a longer 12-item quest scale, which dropped one item from the original six-item scale (My religious development has emerged out of my growing sense of personal identity) and introduced a further seven new items.

Reflecting further on the nature of quest religious orientation, Francis (2007) operationalised three components of this construct in creating the New Indices of Religious

Orientation, styled existentialism (My life experiences have led me to rethink my religious beliefs), self-criticism (For me, doubting is an important part of what it means to be religious), and openness to change (There are many religious issues on which my views are still changing).

While the notion and measurement of religious orientation were originally formulated to differentiate among the religious motivations of religious people in general the formulation may be of particular interest and relevance for the clerical profession. While it may be properly anticipated that the majority of seminarians will record high on intrinsic motivation (in light of the demands on commitment assumed by seminary training), it may also be hypothesised that seminarians may vary in terms of both extrinsic motivation and quest motivation. High levels of extrinsic motivation may lead to shaping a priestly vocation that gives higher emphasis to the social aspects of ministry. High levels of quest motivation may lead to shaping a priestly vocation that gives more attention to posing religious questions and less attention to transmitting religious answers. Consequently, insights regarding the connection between religious orientation and the five factors of personality may be not only of theoretical interest but also of practical benefit within the context of seminary training.

### **Personality and religious orientation**

The connection between personality and religion has been of central interest to the empirical psychology of religion for many years (Argyle, 1958; Beit-Hallahmi & Argyle, 1997; Piedmont & Wilkins, 2013; Saroglou, 2014). The primary question addressed by this developing literature has been concerned with exploring the personality correlates of being religious in terms of factors like worship attendance, personal prayer, religious belief, self-assessed religiosity, and measures of religious attitudes. In an early meta-analytic review of evidence relating religiosity to the Big Five Factors of personality, Saroglou (2002) identified

13 relevant studies and concluded that different measures of religiosity related to the five personality factors in different ways, and that, overall, the effect sizes were small.

Measures of religious orientation do not, however, fit into this broad model for assessing levels of religiosity. Religious orientation measures are concerned with identifying the different motivations of religious people rather than with identifying different levels of religiosity (Francis, 2007). So far a small body of research has begun to demonstrate that different religious motivations relate to the Big Five Factors of personality in different ways.

In an early study, Taylor and MacDonald (1999) employed the two measures of intrinsic religiosity (nine items) and extrinsic religiosity (11 items) proposed by Allport and Ross (1967) among a sample of 368 university students. According to these data, intrinsic religiosity was associated with higher agreeableness scores ( $r = .25$ ) and higher conscientiousness scores ( $r = .23$ ), while extrinsic religiosity was associated with higher neuroticism scores ( $r = .11$ ) and lower openness scores ( $r = -.18$ ).

In another early study Kosek (1999) employed the Polish version of the Swedish Religious Orientation Scale proposed by Hovemyr (1998), assessing intrinsic religiosity (10 items), extrinsic religiosity (12 items) and quest religiosity (6 items), among a sample of 104 school pupils aged around 14 years. According to these data, intrinsic religiosity was associated with higher agreeableness scores ( $r = .41$ ) and higher conscientiousness scores ( $r = .50$ ), extrinsic religiosity was associated with higher extraversion scores ( $r = .21$ ) and quest religiosity was associated with higher agreeableness ( $r = .26$ ) scores and higher conscientiousness scores ( $r = .28$ ).

Rowatt and Schmitt (2003) employed the two measures of intrinsic religiosity (nine items) and extrinsic religiosity (11 items) proposed by Allport and Ross (1967) and the measure of quest religiosity (12 items) proposed by Batson and Schoenrade (1991a, 1991b) among 96 female and 65 male undergraduate psychology students at a private southwestern



university. These data demonstrated significant positive correlations between intrinsic orientation and extraversion among both men ( $r = .26$ ) and women ( $r = .22$ ), and a significant negative correlation between quest orientation and conscientiousness among men ( $r = -.31$ ). No other significant correlations were reported in these data.

Barratt and Roesch (2009) employed three four-item measures of intrinsic, extrinsic, and quest orientations that they had developed from the larger instrument proposed by Allport and Ross (1967) and Batson and Schoenrade (1991a, 1991b) among 413 undergraduates students at a large western university. These data demonstrated significant positive correlations between intrinsic orientation and both agreeableness ( $r = .26$ ) and openness ( $r = .10$ ), significant positive correlations between quest orientation and both neuroticism ( $r = .14$ ) and openness ( $r = .16$ ), and a significant positive correlation between extrinsic orientation and neuroticism ( $r = .09$ ).

Robbins, Francis, McIlroy, Clarke, and Pritchard (2010) employed the two measures of intrinsic religiosity (nine items) and extrinsic religiosity (11 items) proposed by Allport and Ross (1967) and the measure of quest religiosity (12 items) proposed by Batson and Schoenrade (1991a, 1991b) among a sample of 198 undergraduate students and their contacts recruited through religious groups. These data demonstrated that individual differences in the three religious orientations were largely independent of the big five personality factors, apart from a significant positive correlation between intrinsic religiosity and agreeableness ( $r = .17$ ).

Williamson, Hood, Ahmed, Sadiq, and Hill (2010) employed the single-item measures of intrinsic, extrinsic-personal, and extrinsic-social orientations proposed by Gorsuch and McPherson (1989) and the measure of quest religiosity (12 items) proposed by Batson and Schoenrade (1991a, 1991b) among a sample of 236 general psychology students from a small state university. These data demonstrated significant positive correlations

between intrinsic orientation and both agreeableness ( $r = .25$ ) and emotional stability ( $r = .24$ ), significant negative correlations between extrinsic-social orientation and conscientiousness ( $r = -.19$ ) and emotional stability ( $r = -.13$ ), and no significant correlations with extrinsic-personal orientation. Quest orientation was significantly correlated positively with intellect/imagery (openness) ( $r = .22$ ) and negatively with emotional stability ( $r = -.28$ ).

Aghababaei (2013) employed the 14-item Religious Orientation Scale Revised proposed by Tiliopoulos, Bikker, Coxon, and Hawkin (2007). These data demonstrated significant positive correlations between intrinsic orientation and agreeableness ( $r = .24$ ), conscientiousness ( $r = .24$ ) and emotional stability ( $r = .15$ ); significant positive correlations between extrinsic-personal religiosity and agreeableness ( $r = .19$ ) and conscientiousness ( $r = .26$ ); and a significant negative correlation between extrinsic-social religiosity and openness ( $r = -.11$ ). In a second study Aghababaei (2013) employed the single-item indicators of religious orientation proposed by Aghababaei (2012) among a sample of 181 Iranian university students. These data demonstrated a significant positive correlation between intrinsic orientation and conscientiousness ( $r = .21$ ); significant positive correlations between extrinsic-personal religiosity and agreeableness ( $r = .18$ ) and conscientiousness ( $r = .14$ ); and no significant correlations between extrinsic-social religiosity and the five personality factors.

Beshai, Smedley, and Beshai (2016) employed the intrinsic motivation scale proposed by Hoge (1972) among 144 undergraduate students at a small private college. These data demonstrated a significant negative correlation between intrinsic orientation and openness ( $r = -.18$ ).

Two main conclusions emerge from these eight studies. The first conclusion is that the majority of the studies demonstrated a significant positive correlation between agreeableness and intrinsic religiosity. The second conclusion is that no clear pattern was found between any of the five personality factors and either extrinsic religiosity or quest

religiosity. This finding is consistent with the view advanced by Francis (2007) that, while intrinsic religiosity can function as a general measure of religiosity among religiously diverse samples, both extrinsic religiosity and quest religiosity offer measures that only make sense among religiosity committed samples. The original intention of measures of religious orientation was to differentiate the motivation of those who practised their religion

### **Research question**

Against this background, the aim of the present study is to explore the association between the three measures of religious orientation and the Big Five Factors of personality among a sample of highly religious participants, namely those training for priesthood within the Catholic Church in Italy. Specifically three hypotheses will be tested in light of previous knowledge. The first hypothesis is that intrinsic religiosity will be high among seminarians and positively correlated with agreeableness. The second hypothesis is that extrinsic religiosity will be low among seminarians in light of the high demands made by the discipline of life in the seminary. The third hypothesis is that quest religiosity will be related to the personality factor of openness in light of the way in which this factor is conceptualised and operationalised.

## **Method**

### **Procedure**

In the context of programmes operated in the south of Italy for Catholic seminarians on the topic of personality and spirituality, participants were invited to complete a questionnaire covering issues relevant to the programme. Participation in the programme was voluntary and responses to the questionnaire were confidential and anonymous. From the 219 seminarians attending a major seminary in the south of Italy, 170 participated in the programme and returned questionnaires for analysis, making a response rate of 78%.

### **Sample**

Participants' ages ranged from 18 to 43 with an average age of 24 years ( $SD = 4.79$ ); 21% of the participants were in their twenties, 71% in their thirties, and the remaining 8% were in their forties. The sample contained participants at three different stages of formation: 59 were at the beginning of their formation (first three years); 58 were in the middle of their formation (years four and five); and 53 were in the final stage before ordination (years six and seven). The sample also contained seminarians from two different backgrounds: 39 came from the minor seminary, while 131 were living in the family before joining the major seminary.

### Measures

*Religious orientation* was assessed by the New Indices of Religious Orientation (NIRO) developed by Francis (2007). This instrument proposes three nine-item measures of intrinsic religiosity, extrinsic religiosity, and quest religiosity. Each item was rated on a five-point Likert scale: agree strongly (5), agree (4), not certain (3), disagree (2), and disagree strongly (1). Francis (2007) reported the following alpha coefficients: intrinsic, .91; extrinsic, .84; quest, .85.

*Personality* was assessed by the Italian Big Five Questionnaire (BFQ) first published by Caprara, Barbaranelli, Borgogni, and Perugini (1993) and further documented by Caprara, Barbaranelli, and Borgogni (2005), building on the earlier work of Caprara and Perugini (1991), and designed to map onto the five factor model proposed by Costa and McCrae (1985). The five factors assessed by this instrument are described as energy (combining the two facets of dynamism and dominance), friendliness (combining the two facets and cooperativeness/empathy and politeness), conscientiousness (combining the two facets of scrupulousness and perseverance), emotional stability (combining the two facets of emotion control and impulse control), openness (combining the two facets of openness to culture and openness to experience). Each of these ten facets was assessed by 12 items, half positively

worded and half negatively worded. The instrument also contains a 12-item Lie Scale. Each of the 132 items was rated on a five-point scale from complete disagreement (1 = very false for me) to complete agreement (5 = very true for me). Caprara, Barbaranelli, and Borgogni (2005) reported the following alpha coefficients: energy, .81; friendliness, .73; conscientiousness, .81; emotional stability, .90; openness, .75.

### **Data analysis**

The data were analysed using the SPSS package, using the frequency, reliability, correlation, and regression routines.

### **Results**

- insert table 1 about here -

Table 1 presents the scale properties for the New Indices of Religious Orientation (NIRO) and for the Big Five Questionnaire (BFQ). All five factors of the BFQ and the extrinsic scale and quest scale of the NIRO achieved satisfactory levels of internal consistency reliability with alpha coefficients (Cronbach, 1951) of at least .65. The alpha coefficient for the intrinsic scale of the NIRO was less satisfactory, suggesting that the items selected for this scale may be less appropriate for seminarians than for lay people. The problem is that there is insufficient discrimination among the items with very few seminarians disagreeing with the statements.

Closer examination of the individual items within the NIRO give fuller insight into how these measures may be interpreted by seminarians. The mean score on the extrinsic orientation is quite low. Seminarians score low on the items concerned with compartmentalism: only 4% agree that, while they are a religious person, they do not let religion influence their daily life. However, seminarians give somewhat higher assent to the social support received from religion: 31% agree that they go to church because it helps them to feel at home in their neighbourhood. They also give higher assent to the personal support

received from religion: 45% agree that one reason for them praying is that it helps them to gain relief and protection.

The mean score on the intrinsic orientation is high. Seminarians score high on the items concerned with integration: 91% agree that their religious beliefs really shape their whole approach to life. Seminarians score high on aspects of engagement with public religion: 89% agree that they allow almost nothing to prevent them from going to church on Sundays. Seminarians score high on aspects of engagement with personal religion: 89% agree that they pray chiefly because it deepens their relationship with God.

The mean score on the quest orientation is also quite high. Seminarians score quite high on the items concerned with existentialism: 73% agree that their life experiences have led them to rethink their religious beliefs. Seminarians score quite high on aspects of self-criticism: 71% agree that they value their religious doubts and uncertainties. Seminarians score less highly, however, on aspects of ongoing openness to change: yet 27% agree that they are constantly questioning their religious beliefs.

- insert table 2 about here -

Table 2 presents the correlations between age, the three indices of religious orientation, and the five personality factors. Three features of these data require comment. First, age is significantly correlated with extrinsic orientation, and three personality factors. Older seminarians record lower scores on extrinsic motivation and higher scores on friendliness, emotional stability, and openness. Second, extrinsic orientation is significantly positively correlated with intrinsic orientation and quest orientation. Third, openness is significantly positively correlated with energy, friendliness, conscientiousness, and emotional stability. In light of such intercorrelations among the personality factors, regression analyses are needed to clarify the patterns of associations between personality and religious orientations.

- insert table 3 about here -

Table 3 presents the regression of age and the five personality factors on each of the three scales of religious orientation. Three features of these data require comment. First, only one personality factor was associated with the extrinsic orientation. Higher extrinsic motivation was significantly associated with lower emotional stability. Second, only one personality factor was significantly associated with the intrinsic orientation: higher intrinsic orientation was significantly associated with higher conscientiousness. Third, three personality factors were associated with the quest orientation: higher quest motivation was significantly associated with higher openness, lower conscientiousness, and lower friendliness.

### **Discussion and conclusion**

The aim of the present study was to explore the association between the three measures of religious orientation (intrinsic religiosity, extrinsic religiosity, and quest religiosity) and the Big Five Factor of personality (energy, friendliness, conscientiousness, emotional stability, and openness). Specifically three hypotheses were tested. The first hypothesis was that seminarians would score high on intrinsic religious orientation and that there would be a significant positive association between intrinsic orientation and agreeableness. The hypothesis was partly supported by the data. Intrinsic religious orientation was high among seminarians, but the positive correlation was with conscientiousness, not with agreeableness. The second hypothesis was that seminarians would score low on extrinsic religious orientation. This hypothesis was supported by the data. Additionally the data demonstrated a significant negative association between extrinsic orientation and emotional stability. The third hypothesis was that there would be a significant positive correlation between quest religious orientation and openness. This hypothesis was supported by the data. Additionally the data demonstrated that seminarians scored quite highly on two components

of the quest orientation (existentialism and self-criticism) but much lower on the third component (ongoing openness to change).

Five main conclusions and implications for further research and pastoral practice emerge from the findings of this study. The first conclusion concerns the potential benefits for seminary training of taking personality profiling, using the Big Five Factor model of personality into account, when assessing vocational motivation. While conscientiousness is the personality factor underpinning intrinsic religious orientation among the majority of seminarians, other personality factors may help to bring other vocational motivations into play among seminarians alongside intrinsic religious orientation. Lower levels of emotional stability may be associated with higher levels of extrinsic religious orientation. Higher levels of openness may be associated with higher levels of quest religious orientation.

The second conclusion concerns the problem of measuring intrinsic religious orientation among seminarians in a way that can provide finer gradations between high levels of intrinsic orientation. This is necessary because the current items proposed by the NIRO bunch seminarians with uniformly high scores. Poor item discrimination leads to low indices of internal consistency reliability.

The third conclusion concerns the positive association between the personality factor of conscientiousness and intrinsic religious orientation as demonstrated by some previous studies and confirmed by the present study. This is potentially an important research finding since it may help to link the developing literature on religiosity and the Big Five Factor model of personality with the better and longer-established literature on religiosity and the Eysenckian three dimensional model of personality. Specifically a sequence of studies has documented the negative correlation between high scores recorded on the Francis Scale of Attitude toward Christianity (see Francis, 2009) and the Eysenckian dimension of psychoticism (Eysenck & Eysenck, 1976), building on the foundation paper by Francis



(1992). Subsequently one literature has documented the positive association between the Francis Scale of Attitude toward Christianity and intrinsic religious orientation (Francis & Orchard, 1999; Hills & Francis, 2003), while a second literature has documented the inverse association between conscientiousness and psychoticism (Heaven, Ciarrochi, Leeson, & Barkus, 2013).

The fourth conclusion concerns the positive association between lower scores of emotional stability and extrinsic religious orientation. The two aspects of extrinsic religious orientation endorsed by between one-third and one-half of the seminarians concerned the social support received from religion and the personal support received from religion. It is seminarians (and perhaps priests) who are less emotionally stable who seek support from religion in this way. It may be helpful for those responsible for the seminary formation of future priests to be aware of this association.

The fifth conclusion concerns the positive association between higher scores of openness and quest religious orientation. The two aspects of quest religious orientation endorsed by up to three-quarters of seminarians concern existentialism and self criticism. These are the seminarians (and perhaps priests) who agree that their life experiences have led them to re-think their religious beliefs and who value their religious doubts and uncertainties. This aspect of vocational motivation may equip such individuals to appreciate better and to engage more effectively with the religious doubts, uncertainties, and questions of those engaging with their pastoral ministry.

The strength of the present study is that it achieved a high participation rate (78%) from a major Catholic seminary of 219 seminarians. In respect of this Catholic seminary, the findings are secure. Replication and extension studies are, however, needed in order to test the stability of these findings both within other Catholic seminaries and among seminarians from other Christian traditions. Such replication and extension studies need also to afford an

opportunity to refine measures of intrinsic religious orientation more sensitive to differentiation among populations (like seminarians) among whom intrinsic religiosity is likely to be high.

The connections between personality and vocational motivation identified by the present study may be helpful within the context of seminary formation. Instruments like the Big Five and the NIRO may be of practical benefit both to seminarians themselves and to the seminary staff in exploring professional faith trajectories and in enhancing personal awareness.

### References

- Aghababaei, N. (2012). Religious, honest and humble: Looking for the religious person within the HEXACO model of personality structure. *Personality and Individual Differences*, 53, 880-883. doi.org/10.1016/j.paid.2012.07.005
- Aghababaei, N. (2013). Between you and God, where is the general factor of personality? Exploring personality-religion relationships in a Muslim context. *Personality and Individual Differences*, 55, 196-198. doi.org/10.1016/j.paid.2013.02.021
- Allport, G. W. (1966). Religious context of prejudice. *Journal for the Scientific Study of Religion*, 5, 447-457. doi.org/10.2307/1384172
- Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 432-443. doi.org/10.1037/h0021212
- Argyle, M. (1958). *Religious behaviour*. London: Routledge and Kegan Paul. doi.org/10.4324/9780203001271
- Barrett, C. E., & Roesch, S. C. (2009). Evaluating the relationship between the five-factor model of personality and religious orientation. *Journal of Psychology and Christianity*, 28, 195-199.
- Batson, C. D. (1976). Religion as prosocial: Agent or double agent? *Journal for the Scientific Study of Religion*, 15, 29-45. doi.org/10.2307/1384312
- Batson, C. D., & Schoenrade, P. A. (1991a). Measuring religion as quest: Reliability concerns. *Journal for the Scientific Study of Religion*, 30, 430-447. doi.org/10.2307/1387278
- Batson, C. D., & Schoenrade, P. A. (1991b). Measuring religion as quest: Validity concerns. *Journal for the Scientific Study of Religion*, 30, 416-429. doi.org/10.2307/1387277
- Batson, C. D., & Ventis, W. L. (1982). *The religious experience: A social psychological perspective*. New York: Oxford University Press.

- Beit-Hallahmi, B., & Argyle, M. (1997). *The psychology of religious behaviour, belief and experience*. London: Routledge.
- Beshai, J., Smedley, K., & Beshai, T. (2016). The relationship between NEO personality factors and Hoge's Intrinsic Religious Motivation Scale. *Journal of Beliefs and Values*, 37, 114-117. doi.org/10.1080/13617672.2016.1142124
- Büssing, A., Baumann, K. Jacobs, C., & Frick, E. (2017). Spiritual dryness in Catholic priests: Internal resources as possible buffers. *Psychology of Religion and Spirituality*, 9, 46-55. doi.org/10.1037/rel0000063
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Perugini, M. (1993). The 'Big Five Questionnaire': A new questionnaire to assess the five factor model. *Personality and Individual Differences*, 15, 281-288. doi.org/10.1016/0191-8869(93)90218-R
- Caprara, G. V., Barbaranelli, C., & Borgogni, L. (2005). BFQ, Big Five Questionnaire: Manuale seconda edizione. Firenze: Organizzazioni Speciali.
- Caprara, G. V., & Perugini, M. (1991). L'Approccio psicolessicale e l'emergenza dei Big Five nello studio della personalità. *Giornale Italiano di Psicologia*, 18, 721-747.
- Cattell, R. B., Cattell, A. K. S., & Cattell, H. E. P. (1993). *Sixteen Personality Factor Questionnaire: fifth edition (16PF5)*. Windsor: NFER-Nelson.
- Cerasa, A., Lombardo, G., Tripodi, D., Stillitano, E., Sarica, A., Gramigna, V., Martino, I., Pullera, A., Tigani, S., De Carlo, Y., Idone, M., Scaglione, A., Ziarelli, E., Vasta, R., Donzuso, G., Rizzo, M., & Zucaro, D. L. (2016). Five-factor personality traits in priests. *Personality and Individual Differences*, 95, 89-94. doi.org/10.1016/j.paid.2016.02.040
- Costa, P. T., & McCrae, R. R. (1985). *The NEO Personality Inventory*. Odessa, FL: Psychological Assessment Resources.

- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334. doi.org/10.1007/BF02310555
- Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire (adult and junior)*. London: Hodder and Stoughton.
- Eysenck, H. J., & Eysenck, S. B. G. (1976). *Psychoticism as a dimension of personality*. London: Hodder and Stoughton.
- Francis, L. J. (1992). Is psychoticism really a dimension of personality fundamental to religiosity? *Personality and Individual Differences*, 13, 645-652. doi.org/10.1016/0191-8869(92)90235-H
- Francis, L. J. (2005). *Faith and psychology: Personality, religion and the individual*. London: Darton, Longman and Todd.
- Francis, L. J. (2007). Introducing the New Indices of Religious Orientation (NIRO): Conceptualisation and measurement. *Mental Health, Religion and Culture*, 10, 585-602. doi.org/10.1080/13674670601035510
- Francis, L. J. (2009). Understanding the attitudinal dimensions of religion and spirituality. In M. De Souza, L. J. Francis, J. O'Higgins-Norman, & D. G. Scott (Eds.), *International Handbook of education for spirituality, care and wellbeing* (pp. 147-167). Dordrecht: Springer. doi.org/10.1007/978-1-4020-9018-9\_9
- Francis, L. J., & Crea, G. (2015). Psychological temperament and the Catholic priesthood: An empirical enquiry among priests in Italy. *Pastoral Psychology*, 64, 827-837. doi.org/10.1007/s11089-015-0661-5
- Francis, L. J., & Loudon, S. H. (2001). Parish ministry and Roman Catholic regular clergy: Applying Eysenck's dimensional model of personality. *International Journal of Practical Theology*, 5, 216-226. doi.org/10.1515/ijpt.2001.5.2.216

- Francis, L. J., & Musson, D. J. (1999). Male and female Anglican clergy in England: Gender reversal on the 16PF? *Journal of Empirical Theology*, 12, 5-16.  
doi.org/10.1163/157092599X00076
- Francis, L. J., & Orchard, A. (1999). The relationship between the Francis Scale of Attitude toward Christianity and measures of intrinsic, extrinsic and quest religiosity. *Pastoral Psychology*, 47, 365-371. doi.org/10.1023/A:1021310319890
- Francis, L. J., Robbins, M., & Wulff, K. (2011). Psychological type profile of male and female clergy serving in The Presbyterian Church (USA): Implications for strengths and weaknesses in ministry. *Research in the Social Scientific Study of Religion*, 22, 192-211.
- Francis, L. J., & Village, A. (2012). The psychological temperament of Anglican clergy in ordained local ministry (OLM): The conserving, serving pastor? *Journal of Empirical Theology*, 25, 57-76. doi.org/10.1163/157092512X635743
- Galea, P. (2010). Identifying personality features related to religious vocation: A comparison between seminarians and their peers using the NEO Personality Inventory (Revised). *Archive for the Psychology of Religion*, 32, 169-177.  
doi.org/10.1163/157361210X500892
- Gorsuch, R. L., & McPherson, S. E. (1989). Intrinsic/extrinsic measurement: I/E revised and single-item scales. *Journal for the Scientific Study of Religion*, 28, 348-354.  
doi.org/10.2307/1386745
- Heaven, P. C., Ciarrochi, J., Leeson, P., & Barkus, E. (2013). Agreeableness, conscientiousness, and psychoticism: Distinctive influences of three personality dimensions in adolescence. *British Journal of Psychology*, 104, 481-494.

- Hills, P., & Francis, L. J. (2003). Discriminant validity of the Francis Scale of Attitude toward Christianity with respect to religious orientation. *Mental Health, Religion and Culture*, 6, 277-282. doi.org/10.1080/1367467031000101000
- Hoge, D. B. (1972). A validated intrinsic religious motivation scale. *Journal of the Scientific Study of Religion*, 2, 22-24. doi.org/10.2307/1384677
- Hovemyr, M. (1998). The attribution of success and failure as related to different patterns of religious orientation. *International Journal for the Psychology of Religion*, 8, 107-124. doi.org/10.1207/s15327582ijpr0802\_4
- Jung, C. G. (1971). *Psychological types: The collected works* (volume 6). London: Routledge and Kegan Paul.
- Kosek, R. B. (1999). Adaptation of the Big Five as hermeneutic instrument for religious constructs. *Personality and Individual Differences*, 27, 229-237. doi.org/10.1016/S0191-8869(98)00235-9
- Kosek, R. B. (2000). The desire for God: An assessment of seminarians' spirituality through the lens of the 'Big Five'. *Pastoral Psychology*, 49, 43-50.
- Louden, S. H., & Francis, L. J. (1999). The personality profile of Roman Catholic parochial secular priests in England and Wales. *Review of Religious Research*, 41, 65-79. doi.org/10.2307/3512427
- Musson, D. J., & Francis, L. J. (2000). The psychometric properties of the 16PF among male Anglican clergy. *Pastoral Psychology* 48, 231-240. doi.org/10.1023/A:1021391110320
- Musson, D. J., & Francis, L. J. (2002). A comparison of the psychometric properties of the 16PF4 and 16PF5 among male Anglican clergy. *Pastoral Psychology*, 50, 281-289. doi.org/10.1023/A:1014022113246

- Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Piedmont, R. L. (1999). Strategies for using the five-factor model of personality in religious research. *Journal of Psychology and Theology*, 27, 338-350.
- Piedmont, R. L., & Wilkins, T. A. (2013). Spirituality, religiousness, and personality: Theoretical foundations and empirical applications. In K. I. Pargament (Ed.), *APA handbook of psychology, religion, and spirituality: Vol. 1, Context, theory, research* (pp. 175-186). Washington DC: APA. doi.org/10.1037/14045-009
- Robbins, M., Francis, L. J., Haley, J. M., & Kay, W.K. (2001). The personality characteristics of Methodist ministers: Feminine men and masculine women? *Journal for the Scientific Study of Religion*, 40, 123-128. doi.org/10.1111/0021-8294.00043
- Robbins, M., Francis, L. J., McIlroy, D., Clarke, R., & Pritchard, L. (2010). Three religious orientations and five personality factors: An exploratory study among adults in England. *Mental Health, Religion and Culture*, 13, 771-775. doi.org/10.1080/13674676.2010.519468
- Rowatt, W. C., & Schmitt, D. P. (2003). Associations between religious orientation and varieties of sexual experience. *Journal for the Scientific Study of Religion*, 42, 455-465. doi.org/10.1111/1468-5906.00194
- Saroglou, V. (2002). Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences*, 32, 15-25. doi.org/10.1016/S0191-8869(00)00233-6
- Saroglou, V. (Ed.) (2014). *Religion, personality, and social behaviour*. New York: Psychology Press.



Taylor, A., & MacDonald, D. A. (1999). Religion and the five factor model of personality:

An exploratory investigation using a Canadian university sample. *Personality and Individual Differences*, 27, 1243-1259. doi.org/10.1016/S0191-8869(99)00068-9

Tiliopoulos, N., Bikker, A. P., Coxon, A. P. M., & Hawkin, P. K. (2007). The means and ends of religiosity: A fresh look at Gordon Allport's religious orientation dimensions.

*Personality and Individual Differences*, 42, 1609-1620.

doi.org/10.1016/j.paid.2006.10.034

Williamson, W. P., Hood, R. W., Ahmad, A., Sadiq, M., & Hill, P. C. (2010). The

Intratextual Fundamentalism Scale: Cross-cultural application, validity evidence, and relationship with religious orientation and the Big 5 factor markers. *Mental Health, Religion and Culture*, 13, 721-747. doi.org/10.1080/13674670802643047

Table 1

*Scale properties of NIRO and BFQ*

	N items	Alpha	Mean	SD
<b>NIRO</b>				
Extrinsic	9	.74	24.02	5.41
Intrinsic	9	.49	36.29	3.39
Quest	9	.74	32.56	5.40
<b>BFQ</b>				
Energy	24	.65	70.05	8.51
Friendliness	24	.75	86.31	9.27
Conscientiousness	24	.80	86.11	10.52
Emotional stability	24	.86	73.59	12.89
Openness	24	.72	81.09	9.89

Table 2

*Correlations NIRO and BFQ*

	Age	Ex	In	Qu	En	Fr	Co	ES
Extrinsic (Ex)	-.21							
Intrinsic (In)	-.03	.28***						
Quest (Qu)	.02	.16*	.14					
Energy (En)	-.03	.05	.05	.14				
Friendliness (Fr)	.33***	-.23**	.14	.01	.17*			
Conscientiousness (Co)	.00	-.05	.37***	-.09	-.03	.23**		
Emotional stability (ES)	.28***	-.28***	-.01	-.02	.00	.40***	.07	
Openness (Op)	.22**	-.04	.20**	.32***	.29***	.55***	.27***	.27***

Table 3

*Regression of age and personality on religious orientation*

	Intrinsic beta	Extrinsic beta	Quest beta
Age	-.04	-.13	.01
Energy	.01	.04	.02
Friendliness	-.02	-.18	-.20*
Conscientiousness	.34***	.03	-.18*
Emotional stability	-.05	-.21**	.08
Openness	.12	.15	.50***
$R^2$	.15	.12	.18